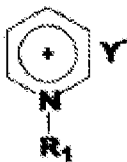


IN THE CLAIMS:

1.-44. (Canceled)

45. (Currently Amended) ~~The apparatus of claim 31,~~ An apparatus for vaporizing and transporting precursor molecules to a deposition chamber for deposition of a thin film on a substrate, the apparatus comprising:

an ionic liquid source, wherein the ionic liquid is of the formula:



wherein R₁ is alkyl and Y⁻ is selected from a group consisting of halides, sulfates, nitrates, acetates, nitrites, tetrafluoroborates, tetrachloroborates, hexafluorophosphates, [SbF₆]⁻, chloroaluminates, bromoaluminates, chlorocuprates, heteropolyanions, trifluoromethanesulfonates, and mixtures thereof;

a carrier gas source in fluid communication with the ionic liquid source; and

a deposition chamber in fluid communication with the carrier gas source.

46. (Currently Amended) ~~The apparatus of claim 31,~~ An apparatus for vaporizing and transporting precursor molecules to a deposition chamber for deposition of a thin film on a substrate, the apparatus comprising:

an ionic liquid source, wherein the ionic liquid is of the formula:



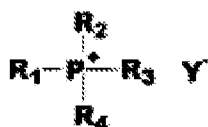
wherein R_1 and R_2 are alkyls and Y^- is selected from a group consisting of halides, sulfates, nitrates, acetates, nitrites, tetrafluoroborates, tetrachloroborates, hexafluorophosphates, $[SbF_6]^-$, chloroaluminates, bromoaluminates, chlorocuprates, heteropolyanions, trifluoromethanesulfonates, and mixtures thereof;

a carrier gas source in fluid communication with the ionic liquid source; and

a deposition chamber in fluid communication with the carrier gas source.

47. (Currently Amended) ~~The apparatus of claim 31,~~ An apparatus for vaporizing and transporting precursor molecules to a deposition chamber for deposition of a thin film on a substrate, the apparatus comprising:

an ionic liquid source, wherein the ionic liquid satisfies the formula:



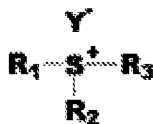
wherein R_1 , R_2 , R_3 , R_4 are alkyls and Y^- is selected from a group consisting of halides, sulfates, nitrates, acetates, nitrites, tetrafluoroborates, tetrachloroborates, hexafluorophosphates, $[SbF_6]^-$, chloroaluminates, bromoaluminates, chlorocuprates, heteropolyanions, trifluoromethanesulfonates, and mixtures thereof;

a carrier gas source in fluid communication with the ionic liquid source; and

a deposition chamber in fluid communication with the carrier gas source.

48. (Currently Amended) ~~The apparatus of claim 31,~~ An apparatus for vaporizing and transporting precursor molecules to a deposition chamber for deposition of a thin film on a substrate, the apparatus comprising:

an ionic liquid source, wherein the ionic liquid satisfies the formula:



wherein R_1 , R_2 , and R_3 are alkyls and Y^{-} is selected from a group consisting of halides, sulfates, nitrates, acetates, nitrites, tetrafluoroborates, tetrachloroborates, hexafluorophosphates, $[SbF_6]^{-}$, chloroaluminates, bromoaluminates, chlorocuprates, heteropolyanions, trifluoromethanesulfonates, and mixtures thereof;

a carrier gas source in fluid communication with the ionic liquid source; and

a deposition chamber in fluid communication with the carrier gas source.

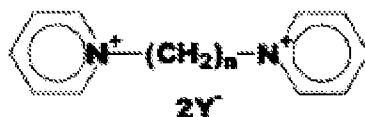
49. (Previously Presented) An apparatus for vaporizing and transporting precursor molecules to a deposition chamber for deposition of a thin film on a substrate, the apparatus comprising:

an ionic liquid source;

a carrier gas source in fluid communication with the ionic liquid source; and

a deposition chamber in fluid communication with the carrier gas source;

wherein the ionic liquid satisfies the formula:



wherein n is from about 1 to about 10 and Y⁻ is selected from a group consisting of halides, sulfates, nitrates, acetates, nitrites, tetrafluoroborates, tetrachloroborates, hexafluorophosphates, [SbF₆]⁻, chloroaluminates, bromoaluminates, chlorocuprates, heteropolyanions, trifluoromethanesulfonates, and mixtures thereof.

50. (Currently Amended) ~~The apparatus of claim 31,~~ An apparatus for vaporizing and transporting precursor molecules to a deposition chamber for deposition of a thin film on a substrate, the apparatus comprising:

an ionic liquid source, wherein the ionic liquid satisfies the formula:



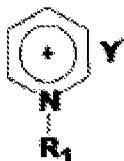
wherein R₁, R₂, R₃, R₄ are alkyls and Y⁻ is selected from a group consisting of halides, sulfates, nitrates, acetates, nitrites, tetrafluoroborates, tetrachloroborates, hexafluorophosphates, [SbF₆]⁻, chloroaluminates, bromoaluminates, chlorocuprates, heteropolyanions, trifluoromethanesulfonates, and mixtures thereof;

a carrier gas source in fluid communication with the ionic liquid source; and

a deposition chamber in fluid communication with the carrier gas source.

51. (Currently Amended) ~~The system of claim 32,~~ A system for vaporizing and transporting precursor molecules to a deposition chamber for deposition of a thin film on a substrate, the system comprising:

an ionic liquid source, wherein the ionic liquid is of the formula:



wherein R₁ is alkyl and Y⁻ is selected from a group consisting of halides, sulfates, nitrates, acetates, nitrites, tetrafluoroborates, tetrachloroborates, hexafluorophosphates, [SbF₆]⁻, chloroaluminates, bromoaluminates, chlorocuprates, heteropolyanions, trifluoromethanesulfonates, and mixtures thereof;

a carrier gas source;

a bubbler device for delivering the carrier gas source to the ionic liquid source; and

a deposition chamber in fluid communication with the ionic liquid source to receive vaporized molecules from the ionic liquid source.

52. (Currently Amended) ~~The system of claim 32,~~ A system for vaporizing and transporting precursor molecules to a deposition chamber for deposition of a thin film on a substrate, the system comprising:

an ionic liquid source, wherein the ionic liquid is of the formula:



wherein R_1 and R_3 are alkyls and Y^- is selected from a group consisting of halides, sulfates, nitrates, acetates, nitrites, tetrafluoroborates, tetrachloroborates, hexafluorophosphates, $[SbF_6]^-$, chloroaluminates, bromoaluminates, chlorocuprates, heteropolyanions, trifluoromethanesulfonates, and mixtures thereof;

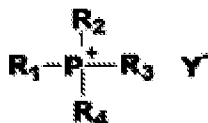
a carrier gas source;

a bubbler device for delivering the carrier gas source to the ionic liquid source; and

a deposition chamber in fluid communication with the ionic liquid source to receive vaporized molecules from the ionic liquid source.

53. (Currently Amended) ~~The system of claim 32,~~ A system for vaporizing and transporting precursor molecules to a deposition chamber for deposition of a thin film on a substrate, the system comprising:

an ionic liquid source, wherein the ionic liquid satisfies the formula:



wherein R_1 , R_2 , R_3 , R_4 are alkyls and Y^- is selected from a group consisting of halides, sulfates, nitrates, acetates, nitrites, tetrafluoroborates, tetrachloroborates, hexafluorophosphates, $[SbF_6]^-$, chloroaluminates, bromoaluminates,

chlorocuprates, heteropolyanions, trifluoromethanesulfonates, and mixtures thereof;

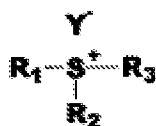
a carrier gas source;

a bubbler device for delivering the carrier gas source to the ionic liquid source; and

a deposition chamber in fluid communication with the ionic liquid source to receive vaporized molecules from the ionic liquid source.

54. (Currently Amended) ~~The system of claim 32,~~ A system for vaporizing and transporting precursor molecules to a deposition chamber for deposition of a thin film on a substrate, the system comprising:

an ionic liquid source, wherein the ionic liquid satisfies the formula:



wherein R₁, R₂, and R₃ are alkyls and Y⁻ is selected from a group consisting of halides, sulfates, nitrates, acetates, nitrites, tetrafluoroborates, tetrachloroborates, hexafluorophosphates, [SbF₆]⁻, chloroaluminates, bromoaluminates, chlorocuprates, heteropolyanions, trifluoromethanesulfonates, and mixtures thereof;

a carrier gas source;

a bubbler device for delivering the carrier gas source to the ionic liquid source; and

a deposition chamber in fluid communication with the ionic liquid source to receive vaporized molecules from the ionic liquid source.

55. (Previously Presented) A system for vaporizing and transporting precursor molecules to a deposition chamber for deposition of a thin film on a substrate, the system comprising:

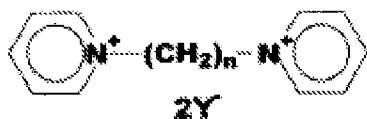
an ionic liquid source;

a carrier gas source;

a bubbler device for delivering the carrier gas source to the ionic liquid source; and

a deposition chamber in fluid communication with the ionic liquid source to receive vaporized molecules from the ionic liquid source;

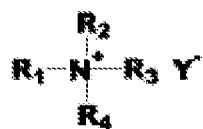
wherein the ionic liquid satisfies the formula:



wherein n is from about 1 to about 10 and Y⁻ is selected from a group consisting of halides, sulfates, nitrates, acetates, nitrites, tetrafluoroborates, tetrachloroborates, hexafluorophosphates, [SbF₆]⁻, chloroaluminates, bromoaluminates, chlorocuprates, heteropolyanions, trifluoromethanesulfonates, and mixtures thereof.

56. (Currently Amended) ~~The system of claim 32,~~ A system for vaporizing and transporting precursor molecules to a deposition chamber for deposition of a thin film on a substrate, the system comprising:

an ionic liquid source, wherein the ionic liquid satisfies the formula:



wherein R_1 , R_2 , R_3 , R_4 are alkyls and Y^- is selected from a group consisting of halides, sulfates, nitrates, acetates, nitrites, tetrafluoroborates, tetrachloroborates, hexafluorophosphates, $[SbF_6]^-$, chloroaluminates, bromoaluminates, chlorocuprates, heteropolyanions, trifluoromethanesulfonates, and mixtures thereof;

a carrier gas source;

a bubbler device for delivering the carrier gas source to the ionic liquid source; and

a deposition chamber in fluid communication with the ionic liquid source to receive vaporized molecules from the ionic liquid source.

57. (Canceled)